

What Is Claimed Is:

1 1. A method of detecting a type of an optical disc
2 according to a rotation speed of a spindle motor loading the
3 optical disc, comprising the following steps:

4 (a) driving the spindle motor;
5 (b) detecting the rotation speed of the spindle motor after
6 a predetermined period; and
7 (c) comparing the rotation speed of the spindle motor with
8 a plurality of predetermined rotation speeds to
9 determine the type of optical disc loaded on the
10 spindle motor.

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1 2. The method of detecting a type of an optical disc as
2 claimed in claim 1, wherein the spindle motor is driven by a
3 voltage having a predetermined waveform.

1 3. The method of detecting a type of an optical disc as
2 claimed in claim 2, wherein the predetermined waveform comprises
3 a higher voltage level in a first period to overcome static
4 friction of the spindle motor, and a lower voltage level in a
5 second period to drive the rotating spindle motor.

1 4. The method of detecting a type of an optical disc as
2 claimed in claim 1, wherein the rotation speed of the spindle
3 motor is measured by Hall sensor.

1 5. The method of detecting a type of an optical disc as
2 claimed in claim 1, wherein no optical disc in the spindle motor
3 is determined when the rotation speed of the spindle motor is
4 higher than the predetermined rotation speeds.

1 6. The method of detecting a type of optical disc as
2 claimed in claim 1, wherein the predetermined rotation speeds
3 at least comprise a first predetermined rotation speed and a
4 second predetermined rotation speed.

1 7. The method of detecting a type of an optical disc as
2 claimed in claim 6, wherein the type of the optical disc is
3 determined as an 8cm optical disc when the rotation speed of the
4 spindle motor is between the first predetermined rotation speed
5 and the second predetermined rotation speed.

1 8. The method of detecting a type of an optical disc as
2 claimed in claim 6, wherein the type of the optical disc is
3 determined as a 12 cm optical disc when the rotation speed of
4 the spindle motor is slower than the second predetermined
5 rotation speed.

1 9. The method of detecting a type of an optical disc as
2 claimed in claim 6, wherein the first predetermined rotation
3 speed is slower than the second predetermined rotation speed.

1 10. An optical disc drive for detecting a type of an
2 optical disc having a spindle motor loading the optical disc,
3 comprising:

4 a processor;
5 a memory coupled to the processor for recording a plurality
6 of predetermined rotation speeds; and
7 a rotation sensor coupled to the processor for detecting
8 a rotation speed of the spindle motor, wherein the
9 processor compares the rotation speed of the spindle
10 motor in a predetermined time with the predetermined

11 rotation speeds to determine the type of the optical
12 disc loaded on the spindle motor.

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1 11. The optical disc drive as claimed in claim 10, further
2 comprising a spindle motor drive to drive the spindle motor by
3 a voltage having a predetermined waveform.

1 12. The optical disc drive as claimed in claim 11, wherein
2 the predetermined waveform comprises a higher voltage level in
3 a first period to overcome static friction of the spindle motor,
4 and a lower voltage level in a second period to drive the rotating
5 spindle motor.

1 13. The optical disc drive as claimed in claim 10, wherein
2 the processor compares the rotation speed of the spindle motor
3 with the predetermined rotation speeds, it is determined that
4 there is no optical disc in the spindle motor when the rotation
5 speed of the spindle motor is higher than the predetermined
6 rotation speeds.

1 14. The optical disc drive as claimed in claim 10, wherein
2 the predetermined rotation speeds at least comprise a first
3 predetermined rotation speed and a second predetermined
4 rotation speed.

1 15. The optical disc drive as claimed in claim 14, wherein
2 the processor compares the rotation speed of the spindle motor
3 with the first predetermined rotation speed and a second
4 predetermined rotation speed, and the type of the optical disc
5 is determined as a small optical disc (8cm) when the rotation

6 speed of the spindle motor is between the first predetermined
7 rotation speed and the second predetermined rotation speed.

1 16. The optical disc drive as claimed in claim 14, wherein
2 the processor compares the rotation speed of the spindle motor
3 with the second predetermined rotation speed, and the type of
4 the optical disc is determined as a normal optical disc (12cm)
5 when the rotation speed of the spindle motor is slower than the
6 second predetermined rotation speed.

1 17. The optical disc drive as claimed in claim 14, wherein
2 the first predetermined rotation speed is slower than the second
3 predetermined rotation speed.

1 18. The optical disc drive as claimed in claim 10, wherein
2 the rotation speed sensor is a Hall sensor